No. 681,142. Patented Aug. 20, 1901.

H. J. SEITZ.

MACHINE FOR LOADING COAL, &c.

(Application filed Feb. 5, 1901.)

(No Model.) 2 Sheets—Sheet 1.

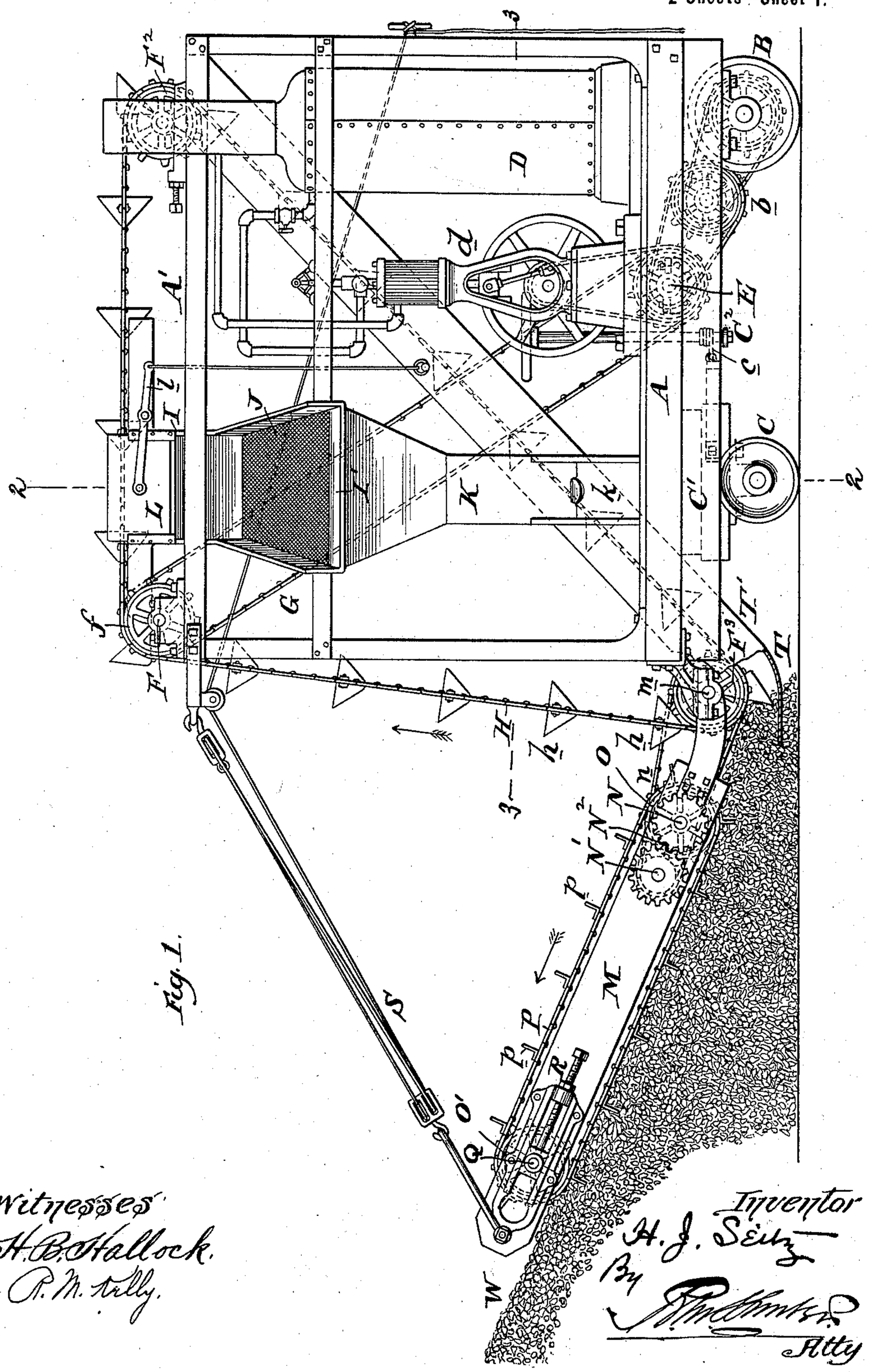

Fig. 1.

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Fig. 2.

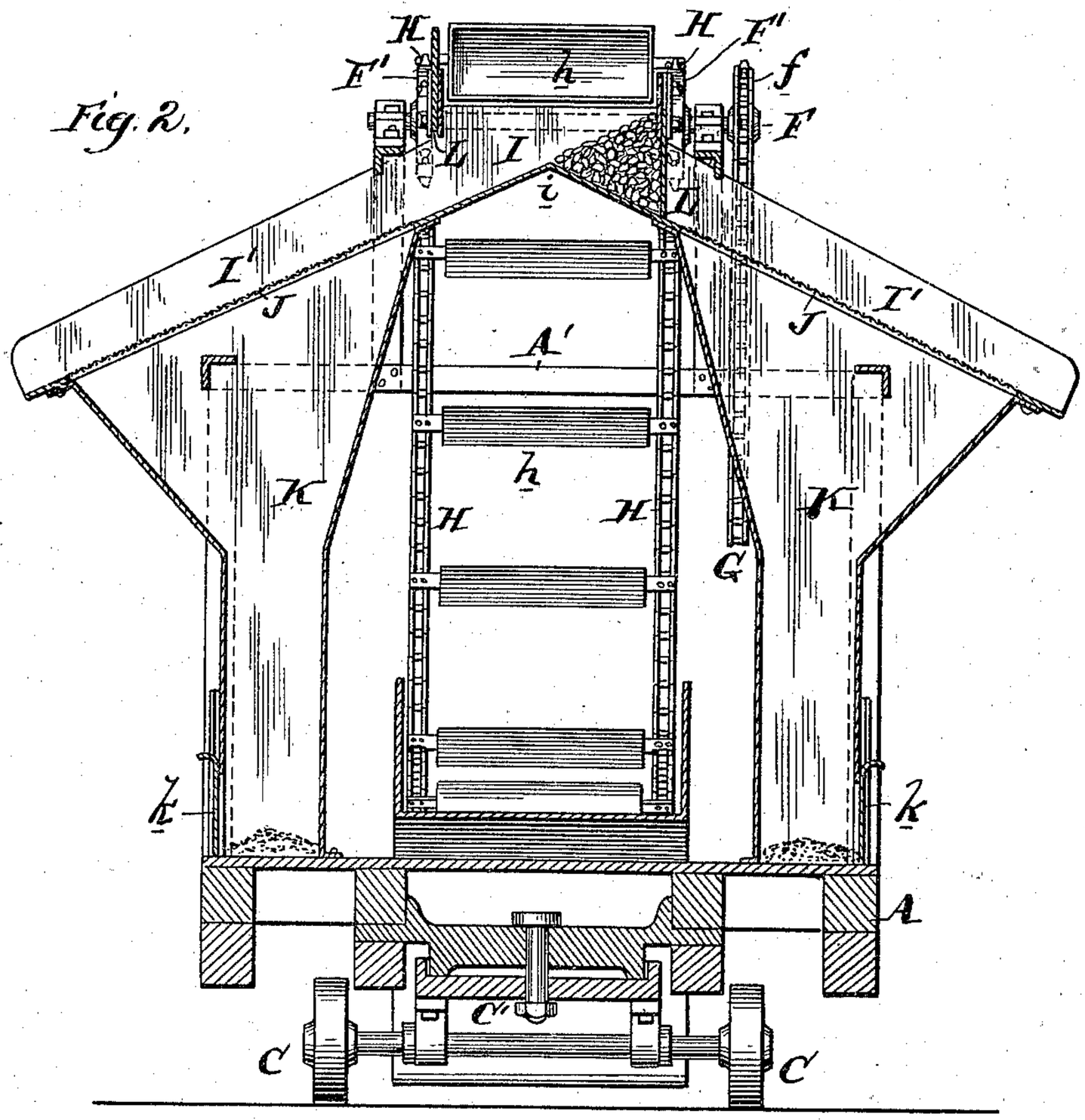
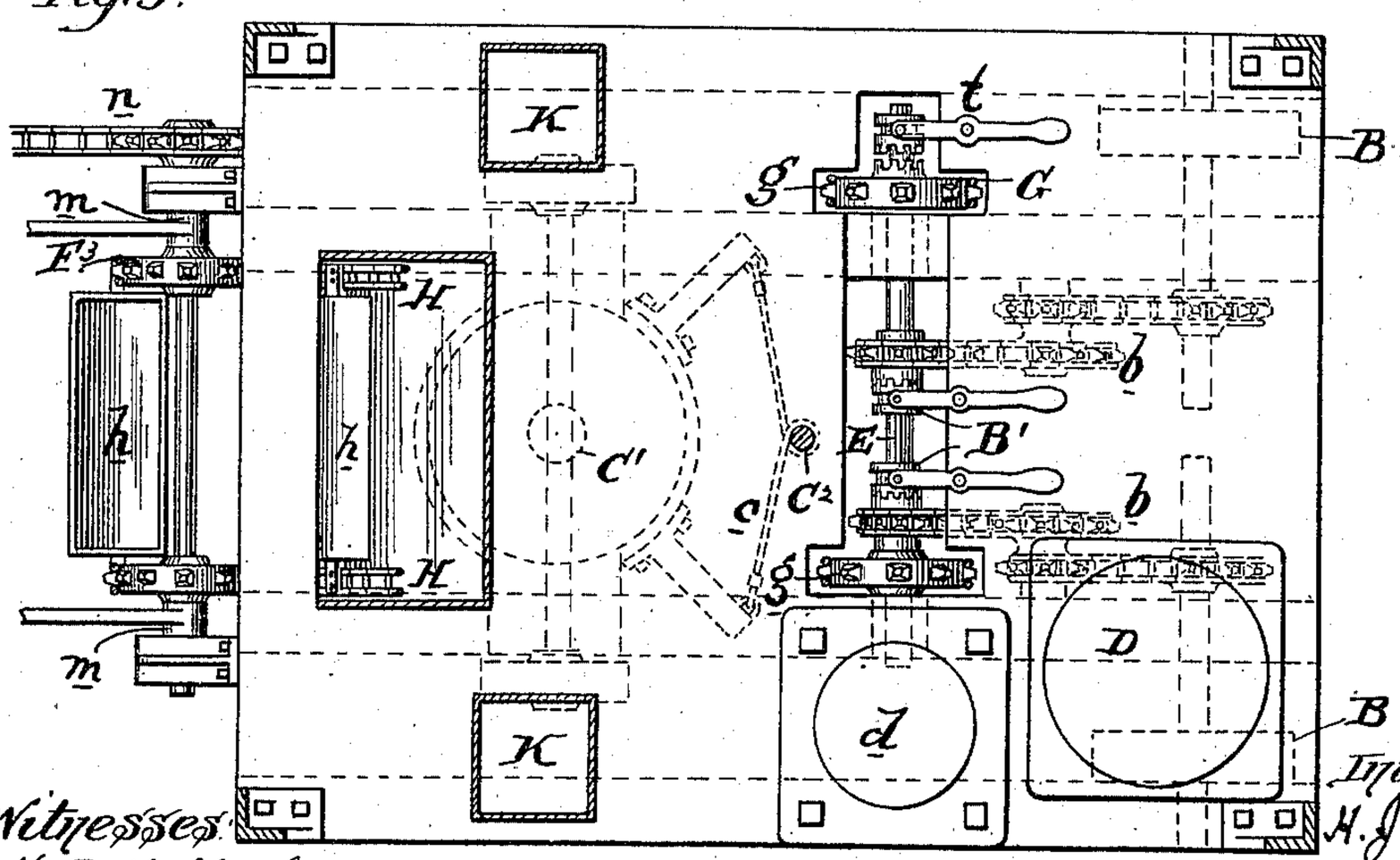


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY JEROME SEITZ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ALBERT L. BARNES, OF SAME PLACE.

MACHINE FOR LOADING COAL, &c.

SPECIFICATION forming part of Letters Patent No. 681,142, dated August 20, 1901.

Application filed February 5, 1901. Serial No. 46,116. (No model.)

To all whom it may concern:

Be it known that I, HENRY JEROME SEITZ, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Machines for Loading Coal, &c., of which the following is a specification.

My invention has reference to machines for loading coal, &c.; and it consists of certain improvements fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

The object of my invention is to provide a machine adapted for the handling of coal, sand, lime, &c., in yards where it is necessary to load wagons from a dump, whereby it may be automatically raked down from the dump, elevated, screened, if desired, and deposited in the wagon.

In carrying out my invention I provide a portable vehicle having discharging-chutes at an elevation, an elevator for elevating the materials into the chutes, and an adjustable raking-down device for feeding the materials to the elevator. My apparatus may also have suitable screening devices for screening the material from dirt on its way to the wagon and preferably while passing through the chute, and, if desired, it may have convenient motive power for giving to it mobile capacity, whereby it may be transferred to different parts of the yard or dump or to different dumps where different grades of the same material or different kinds of material are to be successively handled.

My invention will be better understood by reference to the drawings, in which—

Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a cross-sectional elevation of same on line 2 2, and Fig. 3 is a sectional plan view of same on line 3 3.

A is the main frame of the apparatus and is preferably supported upon two propelling-wheels B B and one pair of steering-wheels C, journaled in a pivoted truck or fifth-wheel C′, which may be turned by chain or cable *c* and hand-wheel and shaft C^2. On the main frame A is a boiler D and a steam-engine *d*, the latter driving a shaft E by sprocket-chain transmission *g*′. The shaft E drives the wheels B by sprocket-chain-power transmission *b*. Clutches B′ enable either of the wheels B or both to be driven in propelling or steering the apparatus for shifting its position. It is also evident that when the right position is taken both clutches may be thrown out of action, in which case the rotation of the shaft E will have no effect in propelling the apparatus and at this time employed only in handling the coal, &c. Of course it is evident that in place of a steam-engine any other type of well-known motive power may be employed—such as an electric motor, compressed-air engine, or gas or gasolene engine—as found most convenient and economical.

The main frame is provided with a superstructure A′, upon which is built a double-chute structure I′, having gates L upon opposite sides of the ridge *i*, adapted to be operated by hand through the levers *l*. These gates may be made in any other convenient manner.

H represents endless chains carrying buckets *h*, forming the elevator. They are guided at the bottom by the wheels F^3 and at the top by wheels *f* and F^2, the chains moving in a triangular path. I, however, do not limit myself to any special number of guide-wheels for the elevator. The elevator lifts the coal, and when fully elevated it passes horizontally over the ridge of the chutes I′ and discharges its coal into the said chutes. The wheels *f* are fast upon a shaft F, and this is driven by the shaft E through the sprocket-chain-power transmission G. A clutch *t* may be employed on shaft E for throwing the transmission-chain G into or out of action, as desired. The lower wheels F^3 for the elevator are secured to a shaft *m*, carried in suitable bearings in the main frame A, and to this shaft is hinged the boom-frame M, having the endless chains P, provided with scrapers *p*. One part of these chains pass about sprocket-wheels O on a shaft N and the other part about sprocket-wheels O′ on a shaft Q, which latter is adjustable by screw adjustment R to or from the wheels O for varying the tension of the chains or for permitting their removal for making repairs. The shaft N is driven from shaft N′ by gearing N^2, and shaft N′ is driven from shaft *m* by sprocket-chain transmission *n*. The angle of the boom

M may be adjusted by the block and tackle S or any other suitable adjusting means.

The raking-conveyer P *p* feeds the coal downward and backward toward the elevator H, and it is guided into the buckets *h* thereof by the shoe T, which extends under and forward of the wheels F^3. This shoe T may be extended upward and rearward, as at T′, to act as an inclined chute through which the return portion of the elevator passes and by which it is shielded.

If desired, the chutes I′ may be provided with screens J for screening the coal on its way to the wagon, the refuse passing down into the hoppers K, from which it may be withdrawn by doors *k* from time to time.

As shown, the apparatus may cause the elevated coal to be discharged from either or both chutes I′ at a time, so as to simultaneously load two wagons where that is necessary.

By use of this apparatus I have found that there is great saving in time and labor over what is required to perform the same amount of work by hand labor, and therefore secures great economy. The saving in time is very important where a dealer has to make many deliveries in a day, as it permits a maximum duty at a minimum of time and expense and with less wagons and men than would otherwise be necessary.

While I prefer the construction herein set out, I do not limit myself to the minor details thereof, as they may be modified in various ways without departing from the spirit of my invention.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a machine for loading coal, &c., into wagons, the combination of a main frame, one or more laterally-projecting chutes at an elevation for discharging the material beyond the machine directly into wagons, an elevator having buckets, guides for causing the elevator to pass close to the ground and also above and over the higher end of the chutes, an adjustable frame carrying an endless raking device for feeding the coal, &c., into the elevator, power devices on the main frame for operating both the elevator and raking device, a shaft N′ on the raking-device frame and geared to the raking device, and a sprocket-chain-and-wheel transmission between the shaft of the elevator and shaft N′.

2. In a machine for loading coal, &c., into wagons, the combination of a main frame, one or more inclined chutes at an elevation for discharging into wagons and provided with screens in their floors, closed refuse-receiving compartments under the screens and carried by the main frame, having doors at their lower parts, an elevator having buckets, guides for causing the elevator to pass close to the ground and also above and over horizontally the higher end of the chutes, an adjustable raking device for feeding the coal, &c., into the elevator, and power devices on the main frame for operating both the elevator and raking device.

3. In a machine for loading coal, &c., into wagons, the combination of a main frame adapted to be supported on wheels, one or more chutes at an elevation for discharging into wagons, fixed to and carried wholly by the main frame and its wheels so as to move with it as a unit, an elevator having buckets, guides for causing the elevator to pass close to the ground and also above and horizontally rearward over the higher end of the chutes, an adjustable endless raking device for feeding the coal, &c., into the elevator, having a rotation so as to cause its lower part to move toward the elevator, supporting and steering wheels upon which the main frame is supported, and power devices on the main frame for operating both the elevator and raking device and also the supporting-wheels to propel the main frame.

4. In a machine for loading coal, &c., into wagons, the combination of a main frame adapted to be supported on wheels, one or more chutes at an elevation for discharging into wagons, fixed to and carried wholly by the main frame and its wheels so as to move with it as a unit, an elevator having buckets, guides for causing the elevator to pass close to the ground and also above and horizontally rearward over the higher end of the chutes, an adjustable raking device for feeding the coal, &c., into the elevator, having a rotation so as to cause its lower part to move toward the elevator, supporting and steering wheels upon which the main frame is supported, power devices on the main frame for operating both the elevator and raking device and also the supporting-wheels independently to propel the main frame, and means for independently connecting or disconnecting the power devices with the supporting-wheels whereby the apparatus may be steered or remain at rest while the elevator and raking devices may be operated alone.

5. In a machine for loading coal, &c., into wagons, the combination of a main frame adapted to be supported on wheels, one or more chutes at an elevation for discharging into wagons, fixed to and carried wholly by the main frame and its wheels so as to move with it as a unit, an elevator having buckets, guides for causing the elevator to pass close to the ground and also above and horizontally rearward over the higher end of the chutes, an adjustable endless raking device for feeding the coal, &c., into the elevator having a rotation so as to cause its lower part to move toward the elevator, supporting and steering wheels upon which the main frame is supported, power devices on the main frame for operating both the elevator and raking device and also the supporting-wheels independently to propel the main frame, and clutch devices for throwing the power off of the

elevator and raking devices on the one hand and supporting-wheels on the other or either of them separately.

6. In a machine for loading coal, &c., the combination of a vehicle on wheels, guide-wheels F^3 at the lower forward part of the vehicle, guide-wheels *f* at the forward upper part of the vehicle, guide-wheels F^2 at the upper rear part of the vehicle, an endless chain of elevator-buckets guided about said guide-wheels so as to pass vertically upward and then horizontally rearward, an endless adjustable scraper hinged to the forward lower part of the vehicle and having its under surface movable toward the elevator, power devices for operating the elevator and scraper, a horizontal guide over which the horizontal portion of the elevator moves the coal provided with an aperture through which the coal falls, an oblique chute having its upper end extending under the opening in the guide and the lower end projecting beyond the vehicle, and a gate to control the coal in the chute.

7. In a machine for loading coal, &c., into wagons, the combination of a main frame, one or more laterally-projecting chutes at an elevation, an elevator having centrally-supported buckets for lifting the coal, &c., from the ground, said buckets being adapted to receive the coal on one side of the said buckets and discharge it on the other side thereof into the chutes, a pivoted boom projecting from the main frame in front of the lower end of the elevator, an endless traveling scraper or raking device carried on the boom and having its under part adapted to move toward the elevator, means to adjust the obliquity of the boom, and power devices for operating both the elevator and the scraper or raking devices.

8. In a machine for loading coal, &c., into wagons, the combination of a main frame, two oppositely and laterally projecting chutes at an elevation, separate gates in each chute to control the discharge of the coal, &c., an elevator having buckets for lifting the coal, &c., from the ground and moving horizontally rearward for discharging it into the chutes, a pivoted boom projecting from the main frame in front of the lower end of the elevator, an endless traveling scraper or raking device carried on the boom and having its under part movable toward the elevator, means to adjust the obliquity of the boom, power devices for operating both the elevator and the scraper or raking devices, and power devices for propelling the main frame and its connecting apparatus.

9. In a machine for loading coal, &c., the combination of a vehicle on wheels, guide-wheels F^3 at the lower forward part of the vehicle, guide-wheels *f* at the forward upper part of the vehicle, guide-wheels F^2 at the upper rear part of the vehicle, an endless chain of elevator-buckets guided about said guide-wheels so as to pass vertically upward and then horizontally rearward, an endless adjustable scraper hinged to the forward lower part of the vehicle and having its under surface movable toward the elevator, power devices for operating the elevator and scraper, a horizontal guide over which the horizontal portion of the elevator moves the coal provided with an aperture through which the coal falls, an oblique chute having its upper end extending under the opening in the guide and the lower end projecting beyond the vehicle, a gate to control the coal in the chute, a screen in the chute between the gate and lower end over which the coal passes and a compartment below the screen for receiving the screenings.

10. In a machine for loading coal, &c., the combination of a vehicle having steering-wheels at one end and two independent driving-wheels at the other end, power devices and transmission-gearing for operating either or both of the driving-wheels, an elevator having a vertical and a horizontal portion, the former being arranged at the end of the vehicle adjacent to the steering-wheels, a laterally-extending chute having its upper end arranged under the horizontal portion of the elevator and its lower end projecting beyond the vehicle, and a pivoted scraper of approximately the same width as the elevator pivoted to the end of the vehicle adjacent to the elevator and steering-wheels and having its under portion movable toward the elevator, and power devices for operating the elevator and scraper.

In testimony of which invention I have hereunto set my hand.

H. JEROME SEITZ.

Witnesses:
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